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Sequence Listing was accepted.

See attached Validation Report.

If you need help call the Patent Electronic Business Center at (866) 217-9197 (toll free).

Reviewer: Anne Corrigan

Timestamp: Wed Sep 19 10:13:00 EDT 2007

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Application No: 09674546 Version No: 4.0

Input Set:

Output Set:

Started: 2007-09-19 09:57:06.399
Finished: 2007-09-19 09:58:50.669
Elapsed: 0 hr(s) 1 min(s) 44 sec(s) 270 ms
Total Warnings: 40
Total Errors: 216
No. of SeqIDs Defined: 3287
Actual SeqID Count: 3287

Error code	Error Description
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (16)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (44)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (50)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (86)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (144)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (148)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (188)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (194)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (198)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (204)

Input Set:

Output Set:

Started: 2007-09-19 09:57:06.399
Finished: 2007-09-19 09:58:50.669
Elapsed: 0 hr(s) 1 min(s) 44 sec(s) 270 ms
Total Warnings: 40
Total Errors: 216
No. of SeqIDs Defined: 3287
Actual SeqID Count: 3287

Error code	Error Description
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (206)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (216)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (258)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (312)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (356)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (372)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (412)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (460)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (492)
E 355	Empty lines found between the amino acid numbering and the proteins
E 321	No. of Bases conflict, this line has no nucleotides SEQID (494) POS (96)
W 213	Artificial or Unknown found in <213> in SEQ ID (3022)

Input Set:

Output Set:

Started: 2007-09-19 09:57:06.399
Finished: 2007-09-19 09:58:50.669
Elapsed: 0 hr(s) 1 min(s) 44 sec(s) 270 ms
Total Warnings: 40
Total Errors: 216
No. of SeqIDs Defined: 3287
Actual SeqID Count: 3287

Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (3023)
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W 213	Artificial or Unknown found in <213> in SEQ ID (3029)
W 213	Artificial or Unknown found in <213> in SEQ ID (3030)
W 213	Artificial or Unknown found in <213> in SEQ ID (3031)
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W 213	Artificial or Unknown found in <213> in SEQ ID (3038)
W 213	Artificial or Unknown found in <213> in SEQ ID (3039)
W 213	Artificial or Unknown found in <213> in SEQ ID (3266)
W 213	Artificial or Unknown found in <213> in SEQ ID (3267) This error has occurred more than 20 times, will not be displayed

SEQUENCE LISTING

<110> FRASER, Claire
GALEOTTI, Cesira
GRANDI, Guido
HICKEY, Erin
MASIGNANI, Vega
MORA, Marirosa
PETERSEN, Jeremy
PIZZA, Mariagrzia
RAPPOLI, Rino
RATTI, Giulio
SCARLATO, Vincenzo
SCARSELLI, Maria
TETTELIN, Herve
VENTER, Craig J.

<120> Neisseria Meningitidis Antigens and Compositions

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<140> 09674546
<141> 2002-11-04

<150> PCT/US99/09346
<151> 1999-04-30

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<151> 1998-07-31

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<151> 1999-02-25

<160> 3287

<170> PatentIn version 3.2

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<213> Neisseria gonorrhoeae

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20 25 30

Pro Lys Arg Asp Thr Leu Asn Gly Ser Gly Thr His Thr Leu Pro Val
35 40 45

Trp Ala Ile Leu Pro Arg Ser Leu Arg Ser Lys Ser Thr Ile Ile Thr
50 55 60

Phe Ser Ala Arg Phe Phe Gly Ser Val Cys Asn Ser Ala Ala Arg Arg
65 70 75 80

Ser Ser Cys Pro Ser Pro Lys Ile Gly Ala Val Pro Phe Ile Gly Ser
85 90 95

Val Leu Met Val Pro Ser Glu Ala Met Leu Arg Lys Ser Ser Gly Glu
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Lys His Ser Val His Ala Asp Cys Pro Ala Ser Ser Gly Arg Trp Asp
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Asn Thr Ala

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cgggtacgca tactgtgccg gtttggcga ttttgcgag atcgttacgc agcaaatcga 180
caatcatcac gtttcggcg cggttttcg ggtctgcttgc caactcggcg gcgcggcg 240
cgtcttgtcc gtgcgc当地 atcggcgc当地 tgccttcat cggttcggtg ctgatggtgc 300
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Pro Lys Arg Asp Thr Leu Asn Gly Ser Gly Thr His Thr Val Pro Val
35 40 45

Trp Ala Ile Leu Pro Arg Ser Leu Arg Ser Lys Ser Thr Ile Ile Thr
50 55 60

Phe Ser Ala Arg Phe Phe Gly Ser Ala Cys Asn Ser Ala Ala Arg Arg
65 70 75 80

Ser Ser Cys Pro Ser Pro Lys Ile Gly Ala Val Pro Phe Ile Gly Ser
85 90 95

Val Leu Met Val Pro Ser Glu Pro Ile Leu Arg Lys Ser Ser Gly Glu
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Lys His Ser Val His Ala Asp Cys Pro Ser Ala Ser Gly Arg Trp Asp
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Lys Thr Ala
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<213> Neisseria meningitidis

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tcgggtacgc atactgtgcc ggtttggcg atttgccga ggtcgttacg cagcaaatcg 180
acaatcatca cgtttccgc gcgggttttc gggctcgctt gcaactccgc ggcgcggcgt 240
tcgtcttgc tcgtccccaa aatcgccgcg gtgccttca tcggttcggt gctgatggtg 300
ccgtccgaac cgattttgag gaagagttcg ggcgagaaac acagcgtcca cgcggattgc 360
ccttgcgtat cggcagggtg ggacaaaacgc gcatag 396

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<213> Neisseria meningitidis

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Met Leu Pro Gln Gly Lys Ala Ala Arg Arg Met Ser Ala Asn Glu Val
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Cys Gly Lys Ala Trp Ala Trp Met Val Leu Val Ile Cys Gln Thr Leu
20 25 30

Pro Lys Arg Asp Thr Leu Asn Gly Ser Gly Thr His Thr Val Pro Val
35 40 45

Trp Ala Ile Leu Pro Arg Ser Leu Arg Ser Lys Ser Thr Ile Ile Thr
50 55 60

Phe Ser Ala Arg Phe Phe Gly Ser Ala Cys Asn Ser Ala Ala Arg Arg
65 70 75 80

Ser Ser Cys Pro Ser Pro Lys Ile Gly Ala Val Pro Phe Ile Gly Ser
85 90 95

Val Leu Met Val Pro Ser Glu Pro Ile Leu Arg Lys Ser Ser Gly Glu
100 105 110

Lys His Ser Val His Ala Asp Cys Pro Cys Ala Ser Gly Arg Trp Asp
115 120 125

Lys Thr Ala
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<213> Neisseria gonorrhoeae

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gaaggctttg ctttgcggtg cggcttttgtt tttgccccgc agcggttcgtt cggctttgcg 180

gatgtcgatg tggcagtagc cggtggggttt ttaatcagg tagtcctgat ggtattcctc 240

ggcgctcgtag aagttttca gcggttcgtt ttcaacaacg aggggcagtt ggtatTTG 300

ctgctcgctt tgagggcgg cggcgatgac ggcttttcg gcgggtcg ttagtacac 360
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gacgcggaaa taatattgca ggtatgcgtc caggctgagt ttgtcggcat cgtaggtcac 480
tttacggtc tcggcatgac ccgtatggcg gtaggacact tttcgtaanc tcgggtttc 540
cgtgttgcgg ttggcgttac cggataccgc gtcaaccacg ccgtcgatgc gttggaaata 600
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<210> 8
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<212> PRT
<213> Neisseria gonorrhoeae

<400> 8

Met Val Val Phe Val Ala Glu Gly Val Phe Gly Arg Ala Val Leu Gly
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His Leu Val Leu Leu Phe Gly Gln Gly Ala Phe Glu Phe Gly Val Thr
20 25 30

Arg Phe Phe Ile Arg Cys Arg Val Glu Ala Phe Ala Leu Arg Cys Gly
35 40 45

Phe Gly Phe Ala Arg Gln Arg Phe Val Gly Phe Ala Asp Val Asp Val
50 55 60

Ala Val Ala Val Gly Val Phe Asn Gln Val Val Leu Met Val Phe Leu
65 70 75 80

Gly Val Val Glu Val Phe Gln Arg Phe Val Phe Asn Asn Glu Gly Gln
85 90 95

Leu Val Phe Leu Leu Ala Phe Glu Gly Gly Asp Asp Gly Phe
100 105 110

Phe Gly Gly Val Gly Val Val His Ala Ala Ala Val Leu Arg Ala Gly
115 120 125

Val Val Thr Leu Phe Val Glu Ala Gly Arg Ile Asn Asp Ala Glu Ile
130 135 140

Ile Leu Gln Asp Val Val Gln Ala Glu Phe Val Gly Ile Val Gly His
145 150 155 160

Phe Asp Gly Leu Gly Met Thr Arg Met Ala Val Gly His Phe Phe Val
165 170 175

Arg Val Phe Arg Val Ala Val Gly Val Thr Gly Tyr Arg Val Asn His
180 185 190

Ala Val Asp Ala Leu Glu Ile Gly Phe Gln Ala Pro Lys Ala Ala Ala
195 200 205

Gly Glu Val Asn Gly Ala Arg Val His Asp Cys
210 215

<210> 9
<211> 662
<212> DNA
<213> Neisseria meningitidis

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gaaggctttg ctttgcgggg cggtcttggt tttgccccggc agcggttcgt cagckttgcg 180
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gcccgtgcgg tattgcgtac cggtgtcggtt gccctgttttgg ttgaggctgg tcggatcaac 420
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tttgacggtt tcggcgtggc ccgtatggcg gtaggacacg tcttcatagc tcggatttt 540
cgtgttgcgg ttggcgttagc cggataccgc gtcaaccacg ccgtcgatgc gttggaaata 600
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<213> Neisseria meningitidis

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<223> Xaa can be any naturally occurring amino acid

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1 5 10 15

Asn Leu Xaa Leu Leu Phe Gly Gln Gly Ala Phe Glu Phe Gly Val Thr
20 25 30

Arg Phe Phe Ile Arg Cys Arg Val Glu Ala Phe Ala Leu Arg Gly Gly
35 40 45

Leu Gly Phe Ala Arg Gln Arg Phe Val Ser Xaa Ala Asp Val Asp Val
50 55 60

Ala Val Ala Val Gly Val Phe Asn Gln Val Val Leu Met Val Phe Leu
65 70 75 80

Gly Ile Val Glu Val Phe Gln Arg Leu Val Phe Asn Asn Glu Gly Gln
85 90 95

Leu Val Phe Leu Leu Ala Phe Glu Gly Xaa Gly Asp Asp Gly Phe
100 105 110

Phe Xaa Gly Val Gly Val Val His Ala Ala Ala Val Leu Arg Thr Gly

115

120

125

Val Val Ala Leu Phe Val Glu Ala Gly Arg Ile Asn Asp Ala Glu Glu

130

135

140

Ile Leu Gln Asp Val Val Ala Glu Phe Val Gly Ile Val Gly His Phe

145

150

155

160

Asp Gly Phe Gly Val Ala Arg Met Ala Val Gly His Val Phe Ile Ala

165

170

175

Arg Ile Phe Arg Val Ala Val Gly Val Ala Gly Tyr Arg Val Asn His

180

185

190

Ala Val Asp Ala Leu Glu Ile Gly Phe Gln Ala Pro Glu Ala Ala Xaa

195

200

205

Gly Glu Val Asn Gly Ala Arg Val His Asp Phe

210

215

<210> 11

<211> 663

<212> DNA

<213> Neisseria meningitidis

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gaagcctttg ctttgcggtg cggcttttgt tttgccggc agcggttcgtt cggctttgcg 180

gatatcgatg tggcagtagc cgttgggtt ttaatcaag tagtcctgat ggtattcctc 240

ggcatcgtag aagttttca gcccgtcggtt ttcaacaacg aggggcagtt ggtatTTT 300

ctgctcgctt ttgaggggcgg cggcgatgac ggcttttcg gccccggatcg tggatcac 360

ggcgctgcgg tattgcgtac cgggtcggtt gcccgttttgg ttgaggctgg tcggatcaac 420

gacgcggaaag aaatattgca ggtatgcgtc taggctgagt ttgtcggtat cgtaggcac 480

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cgtgttgccg ttggcgttagc cggataccgc gtcaaccacg ccgtcgatgc gttggaaata 600

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663

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<213> Neisseria meningitidis

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20 25 30

Arg Phe Phe Ile Arg Cys Arg Val Glu Ala Phe Ala Leu Arg Cys Gly
35 40 45

Leu Gly Phe Ala Arg Gln Arg Phe Val Gly Phe Ala Asp Ile Asp Val
50 55 60

Ala Val Ala Val Gly Val Phe Asn Gln Val Val Leu Met Val Phe Leu
65 70 75 80

Gly Ile Val Glu Val Phe Gln Arg Leu Val Phe Asn Asn Glu Gly Gln
85 90 95

Leu Val Phe Leu Leu Ala Phe Glu Gly Gly Asp Asp Gly Phe
100 105 110

Phe Gly Gly Val Gly Val Val His Ala Ala Ala Val Leu Arg Thr Gly
115 120 125

Val Val Ala Leu Phe Val Glu Ala Gly Arg Ile Asn Asp Ala Glu Glu
130 135 140

Ile Leu Gln Asp Val Val Ala Glu Phe Val Gly Ile Val Gly His Phe
145 150 155 160

Asp Gly Phe Gly Val Ala Arg Met Ala Val Gly His Val Phe Ile Ala
165 170 175

Arg Ile Phe Arg Val Ala Val Gly Val Ala Gly Tyr Arg Val Asn His
180 185 190

Ala Val Asp Ala Leu Glu Ile Gly Phe Gln Ala Pro Glu Ala Ala Ala
195 200 205

Gly Glu Val Asp Gly Ala Arg Val His Asp Phe
210 215

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20 25 30

Asp Phe Arg Ala Asp Lys Ala Ala Gly Gly Phe Phe Gly Ile Gln Ala

35

40

45

His Met Ala Phe Val Tyr Gln His His Ala Ala Ala Thr Leu Ile Phe
50 55 60

Glu Arg Tyr Phe Ala Asp Asp Lys Phe Val Gly Leu Val Leu Arg Gly
65 70 75 80

Asn Leu Arg Val Phe Gln Thr Asp Lys Ala Asp Leu Arg Thr Gly Lys
85 90 95

His His Ala Asn Gly Ala Ala Ala Gln Thr Ala Ala Asp Ile Arg Val
100 105 110

Ala Ala Pro Arg Tyr Cys Pro Ala Ile Leu Pro Trp Ser Ala Ala Ser
115 120 125

Cys Ser Arg Gly Ser Tr